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ABSTRACT

This online pilot project demonstrates the feasibility of using the OCLC transaction tapes to create an online catalog, and the utility of the BRS database structure for loading this data and for online searching. It also shows the feasibility of a user-cordial interface for patrons and for staff and provides an opportunity to test many factors involved in developing a successful system for use by students, faculty, and staff, as well as trained online searchers. Preliminary results from a series of controlled experiments using the online catalog and the card catalog show that recall is similar. The online catalog is generally much more effective and faster for those topics not adequately represented by LC subject headings, but the card catalog may be more efficient for a very simple author/title search. Further experiments with the online catalog at Dartmouth will continue, thus enabling a decision as to whether it is an acceptable alternative to the card catalog. Current planning is to use both for at least one calendar year or until a clear choice is evident. (Author/RAA)

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EXPERIMENTAL ON LINE CATALOG FOR THE DARTMOUTH COLLEGE LIBRARIES

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1. Introduction

Dartmouth College has been conducting a pilot project to assess the feasibility of an on-line catalog for library staff members, faculty, students, and members of the Dartmouth community. The objectives of the pilot project (as stated in May 1979) are as follows:

1. Investigate the feasibility of using the Dartmouth OCLC transaction records as a data base for developing an on-line retrieval system for the Dartmouth Libraries.

2. Develop a "user-cordial interface" that will enable any member of the Dartmouth community to access the Dartmouth Library data base for the purpose of identifying, locating, and obtaining items of interest.

3. Introduce the Dartmouth community to on-line searching of library materials. Elicit comments and suggestions which can be incorporated in the continuing development of the user interface.

4. Conduct controlled experiments to compare access using the current card catalog with the on-line approach. Gain experience on usage and system characteristics which will permit knowledgeable expansion of the pilot project (if successful) to include all library materials for which machine-readable citations are available and to support multiple simultaneous users.

5. Assess the feasibility of including serials receipt control and on-line circulation control in an eventual integrated Dartmouth Library System.

6. Monitor the costs of maintaining the status quo versus moving toward more computer support of library operations. Determine benefits as well as costs which are crucial to informed decision making.

7. Coordinate development with planning taking place nationally and internally to respond to changes resulting from acceptance by LC of AACRII and closing its catalog 1/1/1981.

2. The On-line Pilot Project

As the first step in accomplishing these objectives, Dartmouth entered into an agreement with Bibliographic Retrieval Services (BRS) Incorporated in Scotia, N.Y. BRS agreed to create a data base for Dartmouth containing citations for all materials processed by Dartmouth since 1977. BRS also agreed to load these citations as a private data file (PDF) and to provide search support services through the BRS software.

Dartmouth's monthly OCLC transaction tapes were used as the source of machine-readable citations for building the data base. The OCLC/ MARC tags were mapped onto approximately 20 BRS paragraphs; e.g. main entry (ME), title (TI), series statement (SS). The data base now contains citations for over 120,000 items. These citations represent all materials cataloged by Dartmouth since 1977 and include not only monographs, but also serials, maps, music, manuscripts, and other items from special collections.

As part of its agreement with BRS, Dartmouth has been developing a user interface to the standard BRS on-line search procedures. This interface is aimed at meeting the needs of an intelligent user and assumes no special library or computer training.

There is no users' manual. A design assumption from the outset has been that the interface must be self-explanatory; that is, a new user should be able to start the search procedure in an

extremely simple and straightforward manner. The system should then provide on-line tutorials, HELP, instructions, prompts, and the like to assist the user in conducting successful on-line searches.

3. The User-Cordial Interface

The interface program was developed on a TERAK 8510/a microcomputer. The programs are written in PASCAL and are stored on a floppy disk. A second floppy disk is used to store the TERAK operating system and the systems utilities.

The interface program links the user at the terminal with the Dartmouth College Computer and, via TELENET, with BRS. The program communicates between the user and BRS. It prompts the user for information and modifies the user responses to form BRS commands. It also modifies the BRS responses to make them more intelligible to the user.

The interface is command-driven; that is, there is a small set of commands or functions that the user may perform by instructing the system what to do. These commands may be executed in any order or sequence and may be repeated or not as desired. In addition, the user may ignore the interface provisions completely and access the data base via the standard BRS procedures and protocols while still within the interface program.

Figure 1 shows the message displayed at the time the system is

ready for patron use. When this message appears, the log-on procedure has already been completed.

Welcome to the Dartmouth College Libraries On-Line!

The on-line data base now contains approximately 120000 citations for materials processed since 1977.

Tell the system what you want to do by entering a command. Use the RED key (it's in the lower right-hand corner of the keyboard) and one letter to issue a command as follows:

Press the RED key followed by:

S: To start searching.
P: To list search results.
X: To get special list options.
D: To display search statements
E: To get explanations.
H: To get Help! Attempts to provide assistance.
L: To logoff.
Q: To quit. (Stops the program and logs off.)

Then press the RETURN key.

FIGURE 1
THE INTERFACE OPENING MESSAGE AND COMMAND SET

Searching

The user now has the option of searching via the usual BRS protocols or via the interface. The interface search command (press the RED key followed by S) initiates the search procedure. A sample search session is shown in Figure 2. The user input is underlined.

```
Search type? A)uthor, T)itle, S)ubject, or O)ther: S
Search statement: CIVIL WAR
Checking terms...

Do you want to add more to your search statement? (Y or N):Y

Search type? A)uthor, T)itle, S)ubject, or O)ther: S
Search statement: LINCOLN AND ASSASSINATION
Checking terms...
Do you want to add more to your search statement? (Y ot N):N
(CIVIL WITH WAR).SU. AND (LINCOLN).SU. AND (ASSASSINATION).SU.

Do you want to execute this search? (Y or N):Y

Searching...

After the RESULT statement appears below, you can list the
items retrieved by pressing the RED key followed by P. Press
the RED key followed by X to get special list options.

   RESULT 5
   6_:
```

FIGURE 2
SAMPLE SEARCH SESSION

The interface search logic permits most user-supplied search statements to be entered in natural language order and form; that is, the interface allows for variation of input and supplies the necessary BRS search form.

The interface program scans the user-supplied search statement for words that are not searchable (i.e. words on the BRS stop-word list such as "of","the","for"); for words that are really logical operators (e.g. AND, OR, WITH, ADJ); and for marks of punctuation and other special characters that should not appear in the search statement. Marks of punctuation and multiple spaces are removed; the BRS operator WITH is supplied linking terms for which no other operator is supplied, and parentheses are added to group the search terms appropriately.

The user may perform combined author-title-subject searches. The "Other" search type allows the user to look for data virtually anywhere in the record.

In addition, once having executed a search whose result is too large, the user may narrow it by specifying the search number and a further qualifying term; e.g. 2 AND UNION. (This search might retrieve all items having CIVIL WAR in the subject field and UNION anywhere else in the citation).

Listing results

In order to list search results, the user must tell the system to begin by pressing the RED key followed by P (for print) or X (for special list options). The system will respond by asking the user which search results to list. The user then enters the number of the search result to be displayed.

The system will start displaying the retrieved citations one at a time using a standard format that includes the location, main entry, title, imprint, series statement, and subject. When it reaches the end of the first citation, it asks if the user wants to see the next one. Thus, the user may page through the search results quickly and easily. Figure 3 shows a sample request to list search results and some sample citations.

The interface also provides a special list option which allows more flexibility in displaying search results. The user may list the citations in groups, i.e. 1-10, 2-24, and has a choice of formats available ranging from title only to the full OCLC/MARC record. This special option also permits the user to save a copy of the retrieved citations for transfer to the Dartmouth Computer System.

```
Which search result do you want to list? 5
      1
LO KRESGE
   QC809-P5-W28.
TI Wave instabilities in space plasmas: proceedings of a symposium
   organized within the XIXth URSI General Assembly held in Helsinki,
   Finland, July 31-August 8, 1978 / edited by Peter J. Palmadesso and
   Konstantinos Papadopoulos.
IM Dordrecht, Holland; Boston: D. Reidel Pub. Co. c1979.
SS Astrophysics and space science library; v. 74.
SU Atmosphere, Upper Congresses.
Next?(Y or N):Y
      2
LO BUS/ENGR
   TK7871-65-T76.
ME Trivelpiece, A W, 1931-.
TI Slow-wave propagation in plasma waveguides / AA. W. Trivelpiece.
IM San Francisco: San Francisco Press, 1967.
SU Electric waves.
Next? (Y or N):Y
      3
LO KRESGE
   QC718-5-W3-W44-1976.
ME Weiland, Jan.
TI Coherent nonlinear interaction of waves in plasmas / Jan Weiland and
 Hans Wilhelmsson.
IM New York: Pergamon Press, c1977.
SS International series in natural philosophy; v. 88.
SU Nonlinear theories.
Next? (Y or N):N
```

FIGURE 3
SAMPLE LIST OF SEARCH RESULTS

Other commands

In addition to the commands to conduct searches and list the results, the interface supports several other activities. These are display, explain, help, logoff, and quit.

The display command (press the RED key followed by D) allows the user to review previously executed searches as shown below:

```
1 (NEW WITH HAMPSHIRE OR VERMONT).SU.
RESULT 217

2 (SHAKESPEARE WITH WILLIAM).SU. AND (CRITICISM).TI.
RESULT 10

3 (ONCE).TI. AND (FUTURE WITH KING).TI.
RESULT 3

          **** END OF DISPLAY ****
```

The explain command is used to get on-line tutorials to assist in conducting on-line searches. When the user executes this command, the system responds with the following message:

```
The following topics may be EXPLAINed:
ADJ  AND  AUTHOR  BEGIN  BRS  COMBINE  DISPLAY  EXPLAIN  INTERFACE
LIMIT  LOGON  NUMBERS  OR  PARAGRAPH  PRINT  ROOT  QUALIFY
SAME  SEARCH  SPECIAL  SUBJECT  TITLE  TOPIC  TRUNCATION  WITH

Please type one of these topic names when the prompt appears:
```

The user may select one of these topics. The system will then respond with information about that aspect of on-line searching. The user may then select another topic and get another explanation.

If the user gets completely confused, the help command attempts to provide assistance. This message reviews the commands and tells the user how to get the explanations described above.

The logoff command clears the system and re-initializes it for the next user. The system responds with a message showing how long the user spent searching and asks for user comments.

Figure 4 shows the logoff procedure.

```
Thank you for using the Dartmouth College Library On-Line!

If you have comments or suggestions, please enter them now.
When you are finished, please press the RETURN key an extra
time.  No record of you or your use of the system is being kept.
:
:
Logging off...

CONNECT TIME:          0:05  HH:MM****

You are now logged off.  Please press the RETURN key.
```

FIGURE 4
INTERFACE LOGOFF PROCEDURE

The quit command signs off the system for the day and disconnects the user from BRS.

4. Conclusions

The On-Line Pilot Project has demonstrated the feasibility of using the OCLC transaction tapes to create an on-line catalog. It has demonstrated the utility of the BRS data base structure for loading this data and for on-line searching. It has also shown the feasibility of a user-cordial interface for patrons and staff and has provided an opportunity to test many factors involved in developing a successful system for use by students, faculty, and staff as well as trained on-line searchers.

Preliminary results from a series of controlled search experiments using the on-line catalog and the card catalog show that recall is similar. The on-line catalog is generally much more effective (and faster) for those topics not adequately represented by LC subject headings, but the card catalog may be more efficient for a very simple autnor/title search.

Further experiments with the on-line catalog at Dartmouth will continue, thus enabling us to decide whether it is an acceptable alternative to the card catalog. Our plan is to use both for at least one full calendar year, or until a clear choice is evident.